## AMENDMENT TO THE CLAIMS

- 1. (Original) An electrospun fiber, wherein said fiber is produced from a conducting solution wherein said conducting solution comprises at least one mesoporous precursor material.
- 2. (Original) The fiber of claim 1, wherein the mesoporous precursor material comprises gels prepared with surfactants.
- 3. (Original) The fiber of claim 2, wherein said surfactants are selected from the group consisting of pluronic P-123, pluronic F-127, pluronic F-77, pluronic P-104, pluronic F-38, pluronic L-121, Vitamin E TPGS, Tergitols, Triton-X, polyethylene glycol, alkyl ammonium halides, alkyl amines and mixtures thereof.
- 4. (Original) The fiber of claim 1, wherein said mesoporous precursor material comprises a metal oxide selected from the group consisting of silicon dioxide, aluminum oxide, titanium dioxide, niobium oxide, tungsten oxide, tantalum oxide, vanadium pentoxide, indium tin oxide, calcium aluminate and mixtures thereof.
- 5. (Original) The fiber of claim 1, wherein said fiber has a diameter ranging from about 10 nanometers up to about 1,000 nanometers
- 6. (Original) A network of fibers wherein, said network comprises fibers comprising mesoporous precursor material, and further wherein, said fibers are produced by electrospinning.
- 7. (Original) The fibers of claim 6, wherein the mesoporous precursor material comprises gels prepared with surfactants.
- 8. (Original) The fibers of claim 7, wherein said surfactants are selected from the group consisting of pluronic P-123, pluronic F-127, pluronic F-77, pluronic P-104, pluronic F-38, pluronic L-121, Vitamin E TPGS, Tergitols, Triton-X, polyethylene glycol, alkyl ammonium halides, alkyl amines and mixtures thereof.

- 9. (Original) The fibers of claim 6, wherein said mesoporous precursor material is a metal oxide selected from the group consisting of silicon dioxide, aluminum oxide, titanium dioxide, niobium oxide, tungsten oxide, tantalum oxide, vanadium pentoxide, indium tin oxide, calcium aluminate and mixtures thereof.
- 10. (Withdrawn) A method for electrospinning a fiber from a conducting solution comprising,
- -establishing an electric field between a conducting solution introduction device and a target,
- -feeding said conducting fluid from a reservoir to the conducting solution introduction device,
- -forming a jet of said conducting solution,
- -applying an electric current to said jet to form fibers, and,
- -collecting said fiber on a target,

wherein said conducting solution comprises at least one mesoporous precursor material.

- 11. (Withdrawn) The method of claim 12, wherein said conducting fluid introduction device is selected from the group consisting of a metal needle with a flat tip and a glass pipette.
- 12. (Withdrawn) The method of claim 12, wherein said electric field ranges from about 5 kilovolts to about 100 kilovolts.
- 13. (Withdrawn) The method of claim 14, wherein said electric field is about 20 kilovolts.
- 14. (Withdrawn) The method of claim 12, wherein said conducting solution is fed to said conducting solution introduction device at a controlled rate.

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- 15. (Withdrawn) The method of claim 16, wherein said rate ranges from about 0.1 to about 1000 microliters/minute.
- 16. (Withdrawn) The method of claim 16, wherein said rate is controlled by maintaining said conducting fluid at a constant pressure or constant flow rate.
- 17. (Withdrawn) The method of claim 12, wherein said target is a metal screen, mechanical reel, aerodynamic current or an aqueous liquid.
- 18. (Withdrawn) The method of claim 12, wherein the mesoporous precursor material comprises gels prepared with surfactants.
- 19. (Withdrawn) The method of claim 20, wherein said surfactants are selected from the group consisting of pluronic P-123, pluronic F-127, pluronic F-77, pluronic P-104, pluronic F-38, pluronic L-121, Vitamin E TPGS, Tergitols, Triton-X, polyethylene glycol, alkyl ammonium halides, alkyl amines and mixtures thereof.
- 20. (Withdrawn) The method of claim 12, wherein said mesoporous precursor material comprises a metal oxide selected from the group consisting of silicon dioxide, aluminum oxide, titanium dioxide, niobium oxide, tungsten oxide, tantalum oxide, vanadium pentoxide, indium tin oxide, calcium aluminate and mixtures thereof.
- 21. (Withdrawn) The method of claim 12, wherein said fiber has a diameter ranging from about 10 nanometers up to about 1,000 nanometers
- 22. (Withdrawn) A method for electrospinning a fiber from a conducting solution in the presence of an electric field established between a conducting solution introduction device and a target comprising: a) forming an electrospinning jet stream of said conducting solution, wherein said conducting solution comprises at least one mesoporous material; and b) electrically controlling the flow characteristics of said jet stream.
- 23. (Withdrawn) The method of claim 24, wherein said flow characteristics of said jet stream are electrically controlled by at least one electrode.

- 24. (Withdrawn) An electrospinning apparatus comprising one or more conducting solution introduction devices for providing a quantity of conducting solution, said conducting solution introduction devices being electrically charged thereby establishing an electric field between said conducting solution introduction devices and a target; and means for controlling the flow characteristics of conducting solution from said one or more conducting solution introduction devices.
- 25. (Withdrawn) The apparatus of claim 26, wherein said means for independently controlling the flow characteristics comprises at least one electrode disposed adjacent to each conducting solution introduction device.
- 26. (Withdrawn) The apparatus of claim 26, wherein said means for independently controlling said flow characteristics comprises a means for individually electrically turning on and off a respective spinneret.
- 27. (Withdrawn) The apparatus of claim 26, wherein said apparatus further comprises a pressure source for supplying conducting solution to said solution introduction device at a predetermined pressure.
- 28. (Withdrawn) The apparatus of claim 29, wherein said pressure source is adapted to control the supply rate of conductive fluid at a constant flow rate.
- 29. (Withdrawn) The apparatus of claim 29, wherein said pressure source is adapted to control the supply of conductive fluid at a constant pressure.
- 30. (Withdrawn) The apparatus of claim 26, wherein said apparatus comprises a pressure source for supplying different conducting solutions to at least two solution introduction devices.
- [[33]] 31. (Currently Amended) A method of making a network of fibers wherein, said network comprises fibers comprising mesoporous precursor material, and further wherein, said fibers are produced by electrospinning.



- [[34]] <u>32</u>. (Currently Amended) The method of claim [[33]] <u>31</u>, wherein the mesoporous material comprises gels prepared with surfactants.
- [[35]] 33. (Currently Amended) The method of claim [[34]] 32, wherein said surfactants are selected from the group consisting of pluronic P-123, pluronic F-127, pluronic F-77, pluronic P-104, pluronic F-38, pluronic L-121, Vitamin E TPGS, Tergitols, Triton-X, polyethylene glycol, alkyl ammonium halides, alkyl amines and mixtures thereof.
- [[36]] 34. (Currently Amended) The method of claim [[33]] 31, wherein said mesoporous material is a metal oxide selected from the group consisting of silicon dioxide, aluminum oxide, titanium dioxide, niobium oxide, tungsten oxide, tantalum oxide, vanadium pentoxide, indium tin oxide, calcium aluminate and mixtures thereof.